WHAT IS CLAIMED IS:

1. A method for detecting differences between complex images, comprising:

acquiring a first complex image and a second complex image;

applying a low pass filter to a ratio of the first and second complex images to obtain a low frequency ratio;

modifying the second complex image by the low frequency ratio to replace low frequency components of the second complex image with low frequency components of the first complex image; and

comparing the modified complex image to the first complex image to determine if the second complex image matches the first complex image.

2. The method of Claim 1, further comprising calculating a Fourier transform of the ratio of the first and second complex images in order to apply the low pass filter in a frequency domain.

3. The method of Claim 2, further comprising calculating an inverse Fourier transform of the low frequency ratio in order to modify the second complex image in a time domain.

4. The method of Claim 1, wherein comparing the modified complex image to the first complex image comprises comparing high frequency components of the first and second complex images.

5. The method of Claim 1, wherein the first and second complex images comprise holographic images.

6. The method of Claim 1, further comprising the low frequency components associated with the second complex image representing system changes in an image acquisition system.

7. A method for detecting differences between complex images, comprising:

acquiring a first complex image and a second complex image;

calculating a Fourier transform of a ratio of the first and second complex images to obtain a frequency domain ratio;

applying a low pass filter to the frequency domain ratio to obtain a low frequency ratio;

calculating an inverse Fourier transform of the low frequency ratio to convert the low frequency ratio into a time domain;

modifying the second complex image by the transformed low frequency ratio to replace low frequency components of the second complex image with low frequency components of the first complex image; and

comparing the modified complex image to the first complex image to determine if the second complex image matches the first complex image.

8. The method of Claim 7, wherein comparing the modified complex image to the first complex image comprises comparing high frequency components of the first and second complex images.

9. The method of Claim 7, wherein the first and second complex images comprise holographic images.

10. The method of Claim 7, further comprising the transformed low frequency ratio operable to reduce artificial changes in the first and second complex images generated by an image acquisition system.

11. A system for detecting differences between complex images, comprising:

a digital recorder operable to acquire a first complex image and a second complex image; and

processing resources coupled to the digital recorder, the processing resources operable to:

apply a low pass filter to a ratio of the first and second complex images to obtain a low frequency ratio;

modify the second complex image by the low frequency ratio to replace low frequency components of the second complex image with low frequency components of the first complex image; and

compare the modified complex image to the first complex image to determine if the second complex image matches the first complex image.

12. The system of Claim 11, further comprising the processing resources operable to calculate a Fourier transform of the ratio of the first and second complex images in order to apply the low pass filter in a frequency domain.

13. The system of Claim 12, further comprising the processing resources operable to calculate an inverse Fourier transform of the low frequency ratio in order to modify the second complex image in a time domain.

14. The system of Claim 11, wherein comparing the modified complex image to the first complex image comprises comparing high frequency components of the first and second complex images.

15. The system of Claim 11, wherein the first and second complex images comprise holographic images.

16. The system of Claim 11, wherein the digital recorder comprises a CCD camera.

17. The system of Claim 11, further comprising a beam combiner optically coupled to the digital recorder, the beam combiner operable to receive a reference beam and an object beam to generate the first and second complex images.

18. A method for detecting differences between complex images, comprising:

acquiring a first complex image and a second complex image, the first and second complex images including similar features;

selecting a plurality of aberration values for the first complex image from an anticipated aberration range;

computing an aberration function for each of the selected aberration values;

iteratively modifying the first complex image by each of the aberration functions;

comparing the modified complex image with the second complex image; and

determining an aberration correction value by selecting the aberration value that yields the smallest difference between the modified complex image and the second complex image.

19. The method of Claim 18, further comprising performing a Fourier transform on the first complex image such that the first complex image is modified in a frequency domain.

20. The method of Claim 19, further comprising performing an inverse Fourier transform on the modified complex image before comparing the modified complex image with the second complex image.

21. The method of Claim 18, wherein comparing the modified complex image with the second complex image comprises determining a variance of a modulus of a ratio of the modified complex image and the second complex image.

22. The method of Claim 21, wherein determining the aberration correction value comprises selecting the ratio having the smallest variance between the modified complex image and the second complex image.

23. The method of Claim 18, wherein the first and second complex images comprise holographic images.

24. The method of Claim 18, wherein the anticipated aberration range includes a minimum aberration value and a maximum aberration value.

25. The method of Claim 18, wherein the aberration value comprises a focus value.

26. A method for detecting differences between complex images, comprising:

acquiring a first complex image and a second complex image, the first and second complex images including similar features;

selecting a plurality of aberration values for the first complex image from an anticipated aberration range;

computing an aberration function for each of the selected aberration values;

performing a Fourier transform on the first complex image to obtain a transformed complex image;

iteratively modifying the transformed complex image by each of the aberration functions;

performing an inverse Fourier transform on the modified complex image to convert the low frequency ration into a time domain;

comparing high frequency components of the transformed complex image with high frequency components of the second complex image; and

determining an aberration correction value by selecting the aberration value that yields the smallest difference between the transformed complex image and the second complex image.

27. The method of Claim 26, wherein comparing the transformed complex image with the second complex image comprises determining a variance of a modulus of a ratio of the transformed complex image and the second complex image.

28. The method of Claim 27, wherein determining the aberration correction value comprises selecting the ratio having the smallest variance between the transformed complex image and the second complex image.

29. The method of Claim 26, wherein the first and second complex images comprise holographic images.

30. A system for detecting differences between complex images, comprising:

a digital recorder operable to acquire a first complex image and a second complex image, the first and second complex images including similar features; and

processing resources coupled to the digital recorder, the processing resources operable to:

select a plurality of aberration values for the first complex image from an anticipated aberration range;

compute an aberration function for each of the aberration values;

iteratively modify the first complex image by each of the aberration functions;

compare the modified complex image with the second complex image; and

determine an aberration correction value by selecting the aberration value that yields the smallest difference between the modified complex images and the second complex image.

31. The system of Claim 30, further comprising the processing resources operable to perform a Fourier transform on the first complex image such that the first complex image is modified in a frequency domain.

32. The system of Claim 31, further comprising the processing resources operable to perform an inverse Fourier transform on the modified complex image before comparing the modified complex image with the second complex image.

33. The system of Claim 30, wherein comparing the modified complex image with the second complex image comprises determining a variance of a modulus of a ratio of the modified complex image and the second complex image.

34. The system of Claim 33, wherein determining the aberration correction value comprises selecting the ratio having the smallest variance between the modified complex image and the second complex image.

35. The system of Claim 30, wherein the first and second complex images comprise holographic images.

36. The system of Claim 30, wherein the digital recorder comprises a CCD camera.

37. The system of Claim 30, further comprising a beam combiner optically coupled to the digital recorder, the beam combiner operable to receive a reference beam and an object beam to generate the first and second complex images.

38. A method for detecting differences between complex images, comprising:

acquiring a first complex image and a second complex image, the first and second complex images including similar features;

determining if an aberration value difference exists between the first and second complex images;

correcting the aberration value difference by iteratively modifying the first complex image by an aberration function and comparing the modified first complex image with the second complex image in a high frequency range;

modifying the second complex image with a low frequency ratio to replace low frequency components of the second complex image with low frequency components of the first complex image; and

comparing high frequency components of the modified first complex image and the modified second complex images to determine if the first complex image matches the second complex image.

39. The method of Claim 38, further comprising:

selecting a plurality of aberration values for the first complex image from an anticipated aberration range; and

computing the aberration function for each of the aberration values.

40. The method of Claim 38, further comprising performing a Fourier transform on the first complex image such that the first complex image is modified in a frequency domain.

41. The method of Claim 40, further comprising performing an inverse Fourier transform on the modified first complex image before comparing the modified first complex image with the second complex image.

42. The method of Claim 38, wherein comparing the modified first complex image with the second complex image comprises determining a variance of a modulus of a ratio of the modified first complex image and the second complex image.

43. The method of Claim 42, further comprising determining an aberration correction value by selecting the ratio having the smallest variance between the modified first complex image and the second complex image.

44. The method of Claim 38, further comprising applying a low pass filter to a ratio of the modified first complex image and the second complex image to obtain the low frequency ratio.

45. The method of Claim 44, further comprising calculating a Fourier transform of the ratio of the modified first complex image and the second complex image in order to apply the low pass filter in a frequency domain.

46. The method of Claim 45, further comprising calculating an inverse Fourier transform of the low frequency ratio in order to modify the second complex image in a time domain.

47. The method of Claim 38, wherein the first and second complex images comprise holographic images.